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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,867	03/12/2004	Ching-Hsiang Hsu	3079/215	6599

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LOWE HAUPTMAN BERNER, LLP  
1700 DIAGONAL ROAD  
SUITE 300  
ALEXANDRIA, VA 22314

EXAMINER
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NGUYEN, MADELEINE ANH VINH

ART UNIT	PAPER NUMBER
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2625

MAIL DATE	DELIVERY MODE
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07/24/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/798,867

Applicant(s)

HSU ET AL.

Examiner

Madeleine AV Nguyen

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION*****Drawings***

1. The drawings are objected to because “each gray levels” in Fig.5 should be --each gray level--, “being corresponded to target curves” in Fig.6 should be -- being corresponded to the target curves--, “correspondent with the target curve” in Fig.6 should be -- correspondent with the target curves -- as addressed in the previous steps . Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

2. Claim 1 is objected to because of the following informalities: “luminance” in step (1) should be --the luminance--, “light source” should be --a light source--, “display device” should be --a display device--, “color measurement system” should be -- a color measurement system--, “being executed logarithmic and divisional operation” in step (4) should be -- being executed by logarithmic and divisional operation--; “image” in step (6) should be --an image--, “gamma curve function” in step (7) should be -- the gamma curve function--, “iteration method” should be --an iteration method--, “a transitional gray levels  $X_n$ ” should be -- transitional gray levels  $X_n$ --, “being smaller” should be --is smaller-- . Appropriate correction is required.
3. Claims 5 and 12 are objected for the same and equivalent remarks set forth in claim 1 above.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:
- The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Concerning claim 1:

- (2). “ $2 \leq N \leq$  maximum which the display device can display” in step (2) is indefinite since “maximum” and “which the display device can display” need clarification. What is “maximum” defined ? The maximum of what the display device can display?

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(3) “n groups selected values”, “an interval” in step (3) needs to be defined. How a group is being taken as an interval? What kind of interval is that?

(4) Are “the gray levels (P) and the luminance (Q)” the same with the selected gray levels (P) and the luminance (Q) in step (2)? “logarithmic and divisional operation” needs to be defined or described as one or two operations since logarithmic operation and divisional operation are different and cannot put them together into one operation. How is a fitting function able to be obtained? What “can fit all selected data of the interval”?

(5) How “the fitting luminance of each gray level in interval” is able to be obtained from the fitting function of each interval of each color light while the “fitting function of the gamma parameter for each interval” is mentioned differently in step (4) above. What are the relationship between the fitting functions in (4) and (5)? Are they the same or different? How “a lookup table consisted of gray levels and fitting luminance being able to be made? Clarification is needed.

(6) “the original gray data of image” should be defined and described. The same with “each color light”. Is it the color light of the gray data or of the image. Is the gamma parameter “ $\gamma$ ” in step (6) the same with the gamma parameter in step (4)? What are the difference between “luminance (Y)” and “the gamma function Y”, and their definitions? How can a gamma curve consist of one gray level (without “s”) (X)?

(7) “the image gray signals” should be defined. Are they the original gray data of image being normalized in step (6)? How do “Y” in step (6) and “Yt” relate to each other? Yt and Xt should be defined. It is noted that Y in step (6) is mentioned as luminance (Y) and gamma curve function Y. “its steps” should be clarified to be of the iteration method.

(a) “the gamma curve function” and “the target curve function” should be specified as --the gamma curve function  $Y$ -- and --the predetermined target curve function  $Y_t$ -- Clarification on  $Y_t$  since it is defined in step (7) as a predetermined target curve function  $Y_t$  while in step (7) as the target luminance  $Y_t$ .

(b) Clarification on the lookup table since it is described in step (5) being consisted of gray levels and fitting luminance while in step (7) being consisted of a transitional gray levels  $X_n$ . “transitional gray levels  $X_n$ ” is needed to be defined and described. What is the difference between luminance ( $Y$ ) in step 5 and transitional luminance  $Y_n$ ?

(c) “toterable error” should be defined. Is it --tolerable error--? “the  $Y_t$  and  $X_t$ ” and “the  $Y_n$  and  $X_n$ ” should be addressed in their full names such as the predetermined target luminance  $Y_t$ , the transitional luminance  $Y_n$ , the transitional gray levels  $X_n$ . “the steps mentioned above” needs to be specified in details. What are they, e.g., from (1) to (6) or anything specific?

(d) “the modified gray signals” should be defined since there is no step for modifying the gray signals is previously described. The same with “the gray distribution state”.

Concerning claim 2, clarification on “the light source are red, green and blue (RGB) color lights.

Concerning claim 3, how are “the maximum of neighboring gray levels and luminance” are taken? How is the gamma parameter (should in without “s”) obtained based on the equation

$\gamma$  and the maximum of neighboring gray levels and luminance.  $Q_{\max}$  and  $P_{\max}$  should be defined.

Concerning claim 4, “the fitting function” should be specified since it is defined differently in claim 1 above. Clarification on “Q” as the polynomial function or as the gamma parameter. Clarification is needed on the equation Q since it is defined as a function of the gamma parameter  $\gamma$  while there is no “ $\gamma$ ” in the equation. There is no a in the equation while it is defined as equal to zero. “ $\gamma_m$ ” should be defined and how it is determined. “the gray levels” should be addressed as --the gray levels (P)—and “luminance” as --luminance (Y-- as defined in claim 1 above.

6. Claim 1 recites the limitation "the gamma parameter" in step (4), "the fitting luminance of each gray level " in step (5), the original gray data" in step (6), "the target luminance  $Y_t$ ", "the steps mentioned above", "the modified gray signals" in step (7). There are insufficient antecedent basis for these limitations in the claim.

Claim 3 recites the limitation "the maximum of neighboring gray levels and luminance", the gamma parameters" in lines 1-3. There are insufficient antecedent basis for these limitations in the claim.

7. Claims 5-13 are rejected for equivalent remarks set forth in claims 1-4 since they also fail to particularly point out and distinctly claim the subject matter which applicant regards as the invention as discussed in claims 1-4 above.

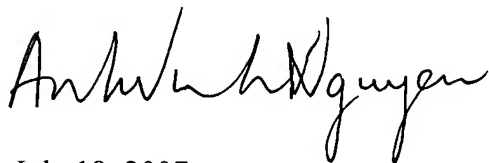
***Conclusion***

8. Claims 1-13 are rejected.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Madeleine AV Nguyen whose telephone number is 571 272-7466. The examiner can normally be reached on Monday-Friday 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on 571 272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



July 19, 2007

Madeleine AV Nguyen  
Primary Examiner  
Art Unit 2625